

$$\frac{g' + w'}{p} \frac{\sqrt{g}}{\sqrt{g'}} - (g + w) = \Delta' = 0 \dots\dots\dots 1$$

gives all that is necessary to determine g and g' , being those values which would make the reading at or near balance most sensitive when a variation in w , the external resistance belonging to coil g , takes place.

Now it is clear that equations II and II' are not necessarily identical, as long as p does not fulfil certain conditions, and therefore the first set of equation II and I may give entirely different values for g and g' from those obtained from the second set II' and I), which means that a simultaneous maximum sensitiveness with respect to an alteration of the external resistances w, w' in either of the two differential branches, is *not* always possible. The following very important and interesting question, therefore, remains to be solved.

What general condition must be fulfilled in the construction of any differential galvanometer in order to make a simultaneous maximum sensitiveness possible, with respect to an alteration of external resistance in either of the differential branches?

[To be continued.]

NOTES ON A COLLECTION OF BIRDS FROM SIKKIM,

by W. T. BLANFORD, F. G. S.—C. M. Z. S.

(With Plates VII and VIII.)

[Received and read 6th September, 1871.]

Mr. L. Mandelli of Darjiling has sent to me for determination a most interesting collection of Sikkim birds, together with a few obtained from the plains near the base of the Himalayas. The birds sent are from various elevations, some being evidently from considerable altitudes. Strange as it may appear, after this chosen land of the feathered tribes had been explored and ransacked for years by such ornithologists as Hodgson, Jerdon, Tickell and many others, it yet yields novelties to so energetic a collector as Mr. Mandelli. Amongst the birds sent is a sixth Himalayan species of *Propasser*, indicated, it is true, some years since by Mr. Blyth, but not hitherto described, and the male of which was previously unknown. There is also a new *Pellorneum*, and apparently one or two undescribed warblers. Two other birds are additions to the fauna of India, and new localities are furnished for a few others.

To my notes on Mr. Mandelli's collection I have added some on birds collected by myself at low elevations in Sikkim. In another paper (antea p. 30), I have given a complete list of all the birds observed or collected by me in the

alpine and subalpine parts of the country, but as the fauna of the Sikkim pine forests differs entirely from that of the warm valleys, I have restricted the notes in my other paper to the former.

[The numbers prefixed to the birds refer to those in Jerdon's *Birds of India.*]

56a. *MILVUS MELANOTIS*, Temm. and Schl.

Fauna Japonica, *Aves*, Pl. iv and v.

Milvus major, Hume. *Rough notes*, Pt. I, p. 326.

After comparing a good series of specimens from the Godávári valley with Temminck and Schlegel's figures and description in the *Fauna Japonica*, I have come to the conclusion that Mr. Hume's first idea, *J. A. S. B.*, 1870, p. 114, was correct, and that the large Indian kite is identical with the Japanese. Mr. Hume has evidently been misled by Radde and Schrenk, who identify *M. melanotis* with *M. migrans*, and he especially mentions (p. 325) that he has not access to the original description or measurements. Of course a bird only as large as *M. migrans* would be much smaller than *M. major*.

In the *Fauna Japonica*, however, it is expressly stated that *M. melanotis* is as large as *M. regalis*, but distinguished by the tail being less deeply forked, not more than in *M. aetolius* (*i. e. migrans*). The measurements given are; length 23 to 24 French inches, wing $17\frac{1}{4}$ to 18, tail $10\frac{1}{2}$ to 11, tarsus $2\frac{4}{12}$, mid toe $1\frac{1}{2}$. The sexes are said to differ in size. The above are the dimensions of males of *M. major*, (the corresponding English measures being, wing $19\frac{1}{4}$, tail $11\frac{3}{4}$, tarsus $2\frac{1}{2}$), and the adult female is considerably larger. There is, therefore, an element of doubt in the identification, because one of the birds described by Temminck and Schlegel is said to be an adult female. But as it is admitted by everybody that there is no distinction in the plumage, and as the male of *Milvus melanotis* clearly equals the male of *M. major* in size, it appears to me more probable that there has been a mistake as to the sex marked on one of the dried skins examined by the European naturalists, than that two representatives of *M. regalis* should be found in Eastern Asia.

This magnificent kite appears to be more widely spread in India than was supposed at first, and it is remarkable it should have been so long overlooked. I obtained two specimens in Sikkim, one shot by Captain Elwes's shikari at Tamlung, the other a young bird in the plumage described at p. 327 of Mr. Hume's "Rough Notes" as that of a young female. The wing measures 19.5 in., so the bird was probably a male.

I have also in February and April of the present year 1871 shot *Milvus melanotis* on the Godávári near Bhadrácalam, about one hundred miles north of Yelaur (Ellore). I obtained three specimens, one of them as late

as April, and I suspect the bird to be a permanent resident in the plains, and probably spread over the northern and eastern part of India. Like other Chinese birds, it may be wanting in Western India.

My observations on the habits of *M. melanotis* differ from those of Mr. Hume so far, that although at times it is certainly wary and difficult of approach, in other cases I have met with it close to human habitations. I shot one flying over my tent, and another a few paces away, near a village in each case, and a third, a fine adult female, I shot sitting on a tree in the middle of a village. I expect *Milvus govinda*, if it found itself limited, would prove equally wary.

71. *НІПІУА NIPALENSIS*, Hodgs.

I obtained a single specimen of this fine owl in the Tista valley, Sikkim, a little below Chingtam at an elevation of about 4000 feet. It was sitting on a high tree, in lofty, rather open forest, and calling at about 3 o'clock in the afternoon.* The cry is a single deep hoot. Unfortunately the body was thrown away without my determining the sex. I took measurements before skinning, and the following is a brief description of the plumage which differs somewhat from that noted by Dr. Jerdon.

Above dark hair brown, all the feathers, except those of the head, having the margins mottled with pale fulvous, the amount increasing on the lower back, until some of the feathers are mottled throughout. Upper tail coverts with several rather broad fulvous bars. Scapularies with broad irregular mottled bands and tips, and some of the largest with nearly the whole outer web pale isabelline fulvous, forming a distinct bar. Ear tufts $3\frac{1}{4}$ inches long, blackish brown on the greater portion of the outer webs, mottled with white on the inner and base of the outer, the white prevailing towards the base on the longest feathers. Lores with long bristly plumes, which are dirty white near the base, and tipped brown; ear coverts greyish white, the upper ones tipped brown; quills earthy brown, the primaries faintly banded, secondaries with broad mottled bars on the outer webs becoming white on the inner. Outer tail feathers similar to the secondaries, central with about six mottled bars; all the rectrices tipped pale brown, whitish at the extreme end. Chin with greyish bristly feathers like the lores, all the rest of the under parts, under wing coverts, tibial and tarsal feathers white with huge brown spots. Toes feathered nearly to the base of the claws. Iris brown, bill and toes yellow, claws dusky at points, pale at base. Length (of fresh specimen) $21\frac{1}{2}$, expanse 58, wing 17.5, tail 9.25, tarsus 3,† bill from gape 2.1, from end

* Mr. Hodgson, in his original description of this bird, *As. Res.* XIX, p. 172, mentions its diurnal habits.

† This I find in my note book, but I make the dried tarsus about $2\frac{1}{2}$ to $2\frac{3}{4}$, it is very difficult to measure on account of the thick feathers. Jerdon gives 2 in., which is certainly too little, but his measurements are those of *H. pectoralis*.

of cere 1.43, mid claw straight to point 1.2, inner claw 1.6, hind claw 1.3 inch.

This bird differs from Jerdon's original description of *H. pectoralis*, Madras Journal, Lit. and Sc., Vol. x, p. 89 in the following characters :

The aigrettes are not barred, the feathers of the throat are not barred but spotted; there is no distinct pectoral band, a slight fulvous tinge on the sides of the breast is all that appears. The bill is yellow, not greenish horny, the toes bright yellow, not reddish yellow. The tarsus appears to be decidedly longer. I should say, judging from the description and Jerdon's figure, that the two forms are distinct species, (conf. Blyth, Ibis, 1866, p. 254).

The Bútia name of this owl is *Migdori*.

80. GLAUCIDIUM BRODIEI, (Burton).

The differences in plumage in this bird are remarkable. I have three specimens lying before me, one being from Mr. Mandelli's collection. In the first, probably a young bird the whole plumage has a rufous tint. The head feathers with broad bars of reddish buff, the tail with 8 bars, each $\frac{1}{10}$ in. broad, extending right across the feather. In the second, the whole prevailing colour is very dark brown, the head with small buff spots, the tail (newly moulted and not fully grown) with narrow bars not extending across the central part of the feather. The third specimen is more rufous than the second, but less than the first, the tail feathers are crossed by 7 bars, interrupted near the shafts, whilst the head is greyish brown, unspotted behind and with only a few faint spots on the forehead. This evidently leads to the form described by Mr. Hume in the Ibis, 1871, p. 26, and referred to under the name of *G. immaculatus* in his Rough Notes, Part I, p. 420.

156. PICUS CATHIPILIARIUS, Hodg.

In two males, sent by Mr. Mandelli, the bars on the outer rectrices are fulvous, not white. The wings measure 3.75 and 3.9 in.

157. P. MACEI, Vieil.

Specimens from Sikkim differ from those shot near Calcutta in having a somewhat dingy grey tinge with faint subobsolete streaks below, instead of buff. I doubt if the distinction be worthy of specific rank, but so far as I can judge it seems to be constant.* I have two specimens, including one sent

* Since writing the above I have received from Mr. Mandelli a very peculiar specimen of a woodpecker, which I can only suppose to be an old bird of *P. Macei* in a state of semi-albinism. The back is brown, instead of black, and the middle rectrices have one distinct white spot on each web, and a second a little fainter about a quarter inch further back. Otherwise it agrees with *P. Macei*. The dimensions exceed those given by Jerdon, the wing being $4\frac{1}{4}$ inch long, but I find Bengal specimens equally large.

by Mr. Mandelli, and I find a third in the Indian Museum collection, which contains an abundance of Calcutta specimens. If the Himalayan race be separable, it might bear Hodgson's name *pyrriceps*. The figures in the *Planches Coloriées* and in Malherbe's Monograph are of the Bengal race.

163. *YUNGIPICUS PYGMÆUS* (Vigors). Sikkim.

94. *CHELIDON NIPAENSIS*, (Hodg.)

I found this bird tolerably common in the Tistá valley between Chungtam and Tamling, often hunting in company with *Collocalia nidifica*. None were seen above about 5000 feet elevation.

263. *TEPHRODORNIS PELVICA*, (Hodgs.)

An adult (male?) is sent by Mr. Mandelli, and I have two skins purchased at Darjiling, one perhaps that of a female, agreeing with Swinhoe's description of that sex from a Hainan specimen, Ibis, 1870, p. 242, except that the eye streak is well marked, and the lower points brownish. It is probably a young bird, for there are some pale markings on the edges of the secondary quills. The bill, however, is black throughout. The dimensions (in inches) rather exceed those given by Jerdon and Swinhoe.

	wing.	tail.	tarsus.	bill from forehead.	bill from gape.
1. Adult (? male),...	4.65	3.7	0.82	0.85	1.15
2. ? Female,	4.6	3.35	0.83	0.8	1.1
3. Young,	4.7	3.6	0.83	0.77	1.1

The third has the plumage above rather light brown, with traces of white bars on the back, the feathers of the head with pale centres, eye streak brown, secondary quills and tail feathers with rufous borders, and an interrupted dark streak, inside the pale border, the tips being mottled; lower parts brownish, but paler than in No. 2; bill pale coloured throughout.

270. *GRAUCALUS MACCI*, Less.

A young bird from Sikkim is moulting, and exchanging its nestling plumage for that of the adult. Some of the nestling feathers remain, those on the back are earthy brown with pale edges, those on the lower parts brownish grey, also with pale edges, but there are not many left, so that it is difficult to say to what extent the under surface is barred in this stage. It is evident, however, that the bars, if they exist, are much broader than in the form commonly described as the young,* and much browner in colour. The new feathers on the other hand are pure ashy grey on the throat and upper breast, barred on the lower breast, abdomen and thigh coverts, the vent being white. Wing 7.2, tail 5.6, tarsus 1.12 inch.

This is a very interesting specimen, because it proves that it is not the young bird, nor the bird of the second year, which is barred underneath

* Hartlaub Jour. F. Ornith, 1864, p. 440.

throughout. I know that in the race inhabiting the Central Provinces the female is barred beneath at all ages. I have four specimens from Chándá and the Godávarí valley, all females, and there are three more in the Indian Museum from Singbhúm, Chutia Nágpúr, &c. Several are evidently adults, all are barred beneath on the throat and breast. Indeed, I am far from sure that the male of the Central Indian form is not also barred, one specimen in the Indian Museum marked as a male from Chutia Nágpúr certainly is so, but a male from Mánbhúm resembles the Himalayan bird, except that it is a little smaller, wing 6·75. This, however, may belong to the Eastern Bengal race, which is found in the Himalayas and East of the Bay of Bengal. The Indian form proper is, as a rule, rather smaller with a slightly smaller bill.*

G. Layardi, Blyth (? *G. pusillus* olim) Ibis, 1866, p. 368, is apparently quite distinct, for it is said to have the anterior under wing coverts barred, which is never the case in adults of the Central Indian form, and, according to Mr. Blyth, the breast in the female of *G. Layardi* is not barred. A description of the adult female of *G. Macei* from Chanda may be useful to enable ornithologists with better collections to determine how far the Indian form is separable from the Himalayan, Eastern Bengal and Barmese race.

Upper parts bluish grey, the feathers of the rump and upper tail coverts with whitish edges. Central tail feathers a rather browner grey, outer tail feathers brown, passing into white at the tips, the white tips, being very narrow and soon worn off on the central feathers, so that they can only be detected in freshly moulted plumage, but increasing progressively in length until in the outermost rectrices they are $\frac{3}{4}$ in. to an inch long. Quills brown, all but the 1st narrowly edged inside and outside with white, the last secondaries (tertiaries) with the outer web grey. Lores dusky grey, a dark band from them passing through the eye and comprising the ear coverts. Lower plumage greyish white barred with darker grey on the throat and breast; abdomen and under tail coverts white, with a few dusky bars, further apart than on the breast, on the upper part of the belly and on the flanks.

Measurements (in inches) taken before skinning

Length	wing	tail	tarsus	bill from forehead	bill from gape
12	6·5 to 6·75	5·25	1·	0·9	1·4

Young birds have the grey of the head less pure, and the lower parts white, barred with dusky, the bars in some cases extending to the vent.

If the races from Central India and the Himalayas be distinguishable, it remains to be seen which is *G. Macei* of Lesson. The Himalayan and Barmese races are identical, I believe.

631a. ZOSTEROPS SIMPLEX, Swinhoe.

Two specimens from Eastern Nipal, sent to me by Mr. Mandelli, belong to this race, which must be added to the Birds of India. The difference

* This has been, I find, noticed by Beavan, Ibis, 1867, p. 322.

from *Z. palpebrosus* is very slight, being precisely, as mentioned by Mr. Swinhoe, Ibis, 1870, p. 348, the smaller size of *Z. simplex*, and the greener tinge of the upper parts. I find other specimens from the Western Himalayas in the Indian Museum also referable to the Chinese race, whilst, as so frequently happens, specimens from the base of the Himalayas are intermediate in colour. But as there is no distinction either in hue or size between birds from China and others from the Himalayas, and as those from the plains of India appear equally constant, I think these two races are fairly distinguishable, and that the intermediate forms are hybrids. I append the dimensions (in inches) of the Himalayan birds and of two specimens of *Z. palpebrosus*.

	wing	tail	tarsus	bill from forehead.
<i>Z. simplex</i> , Sikkim,	1·95	1·33	0·6	0·37
Do. Do.	1·95	1·45	0·62	0·35
<i>Z. palpebrosus</i> , Godávari ♂	2·1	1·5	0·6	0·35
Do. Do.	2·15	1·65	0·62	0·35

The Nilgiri race is a little larger than *Z. palpebrosus*, and of the same colour as *Z. simplex*, but the difference is not great, and I have but one specimen for comparison, (Confr. J. A. S. B. 1869, Pt. II, p. 170).

308. *CYORNIS MAGNIROSTRIS*, Blyth.

A female of this rare bird is amongst Mr. Mandelli's specimens, and I find a male in the Indian Museum collection, also from Darjiling. The latter agrees well with Major Godwin-Austen's description, J. A. S. B. 1870, p. 100. The central tail feathers are the same colour as the black. Mr. Blyth Ibis, 1866, p. 371, compares the coloration with that of *Oyornis rubeculoides*, but *C. magnirostris* has not the blue throat of that species, on the other hand the coloration approaches so closely to that of *C. Jerdoni*, that the two species can only be distinguished by the rather darker blue of the back, and the larger size and powerful bill of *C. magnirostris*.

The female has, I think, been described by Jerdon from the rather faded type specimen in the Asiatic Society's collection, the following is an account of the coloration in a fresh specimen. Upper parts olive, forehead and lores rufescent, feathers around eye pale ferruginous, tail browner than back, with a ferruginous tinge on the margins of the feathers; quills dark brown, all but the first two broadly margined with dull rufous. Major Godwin-Austen has overlooked Mr. Blyth's description of the male of this species from Hodgson's drawings, Ibis, 1866, p. 371.

Under parts ferruginous, deepest on the breast, flanks olive, lower abdomen and under tail coverts white.

The dimensions are, in inches.

	wing	tail	tarsus	bill from forehead	bill from gape.
Male.....	3·25	2·45	0·7	0·55	0·77
Female,	3·17	2·2	0·7	0·55	0·75

325. ? *ERYTHROSTERNA ACORNAUS*, Hodgs.
(Conf. J. A. S. B. 1869, Pt. II, p. 174).

A specimen from Darjiling which I am disposed to refer to this species has the upper parts olivaceous, whilst on the forehead there is a single blue feather. Can the male bird be blue? I have nothing else to add to the suggestion of Mr. Hume that this form may be the female of *E. maculata* (J. A. S. B. 1870, Pt. II, p. 116).

320. *SIPHIA LEUCOMELANURA*, (Hodgs.)

Of two specimens sent by Mr. Mandelli, one has the whole chin, throat and upper breast white, and the lower breast and abdomen sordid brown, the other has only the chin and throat white, and the rest of the lower parts, except the lower tail coverts, isabelline. In both the quills are brown, the primaries and all the secondaries, except the last 4 or 5, with rufescent margins. The female has been described by Dr. Stoliezka, J. A. S. B. 1868, Pt. II, p. 32.

321. *S. SUPERCILLARIS*, (Blyth).

Of this also two specimens are sent by Mr. Mandelli. The quills are brown with rufous margins, the central rectrices the same colour as the back, lateral rectrices darker, those nearest the centre with narrow faint subobsolete transverse bands, all margined with cyaneous; extreme base of all rectrices, except the centre pair, white. In one specimen the ferruginous colour of the breast is mixed with olivaceous. Wing 2·3, tail 1·75, tarsus 0·7, bill 0·32 inch.

313. *NITIDULA HODGSONI*, (Moore).

The only specimen differs somewhat, both in colour and dimensions from Dr. Jerdon's description. The quills are dark brown, not black, the secondaries externally with blue edges, the lores and ear coverts appear to be blue, and the colour below is rich ferruginous, as deep as in *Larvivora superciliaris*. Wing 1·9, tail 1·25, tarsus 0·63, bill from forehead 0·35, from gape 0·48 inch.

This bird appears to me rather to consort with the *Ruticillinae* than with the *Muscicapinae*. Its bill is slightly more depressed than that of *Ianthia* or *Larvivora*, and its legs a little shorter, but the difference is very small. The fact is, that the distinction between the two families is rather difficult to determine in these Himalayan forms. The bird was described by Moore as a *Nemura* (= *Ianthia*). Mr. G. R. Gray, in his very useful Hand-list of genera and species of birds, evidently by oversight, quotes it twice; as *Nemura Hodgsoni* (3188) at p. 222, and as *Nitidula Hodgsoni* (4903) at p. 327.

329. *PNOEPTYGA SQUAMATA*, (Gould). *Tesia rufiventer*, Hodgs.

Of two specimens received one has the upper parts nearly uniform olivaceous brown, the other has a small bright ferruginous spot at the apex of nearly every feather. Both have the lower parts ferruginous, the feathers with olive centres and narrow dusky margins. From the differences in the upper plumage, it is evident that the colour of the lower parts does not change with age, (vide antea, p. 55).

338. *BRACHYPTERYX CRURALIS*, Blyth.

A pair, male and female, are sent by Mr. Mandelli, and I have a young bird, shot by myself, which I am inclined to refer to this species, although the tarsi are longer than in the adult specimens, whilst the bill is much shorter. It may belong to an undescribed form, so I give a description.

Plumage generally olive brown, all the feathers of the upper parts, throat and breast with rufous centres, upper tail coverts rufous, belly pale brown. Wing 2.55, tail 1.7, tarsus 1.3, bill from forehead 0.43 inch.

336. *BRACHYPTERYX NIPALENSIS*, Hodgs.

A single specimen from Darjiling has the wings rufous brown, the margins being more rufous than the rest of the feathers. The grey of the breast is mixed with white, and there is a greyish tinge on the feathers of the throat and abdomen in places. This may be a young male. Wing 2.4, tail 1.5, tarsus 1.08, bill from forehead, 0.47.

I fully agree with Mr. Hume (*Ibis*, 1870, p. 529) in considering *Hodgsonius* as closely allied to *Larvivora*, but I cannot see the possibility of dissociating it, and *Callene*, from *Brachypteryx*, as is done by Mr. G. R. Gray, in his recent "Hand-list of Birds," in which he places the last named in the *Leiothrichinæ** (a position unsuited for it in my opinion,) and all the other genera named, with *Ruticilla*, in the *Luscininæ*. *Brachypteryx nipalensis* is very much like a *Calliope*, and although there is also a similarity to *Pnoeptyga*, it is I think not so marked, partly perhaps because there is no resemblance in the general coloration.

It is a pity we have no details of the nidification of *Brachypteryx*, as it would aid in shewing its affinities. The nest of *Callene frontalis* is said to be wren-like, *Ibis*, 1866, p. 373, but the allied *C. albiventris*, (*P. Z. S.* 1867, p. 834), nidificates in a hole of a tree, and lays but two eggs. Unless the length of a bird's tail be taken as the most important point in its structure, I do not see how *Callene* and *Brachypteryx* can be classed apart, and I am

* Prof. Newton, in the *Zoological Record* places *Brachypteryx* amongst the *Timaliidae*. Some Malayan forms, formerly assigned to *Brachypteryx* belong to this family, (*Ibis*, 1865, pp. 33, 47), but the Himalayan species differ greatly in structure and habits from the Timaline birds.

disposed to separate both from the wrens, and also from *Myiophonus*, and class them with *Hodgsonius*, *Ianthia*, *Larvavora*, *Tarsiger*, and *Calliope*, either in the *Ruticillinae*, or as a distinct subfamily. I am not sure but that *Nitidula* might be added.

529. HOREITES MAJOR, Hodgs.

I obtained a specimen on Sinehal near Darjiling.

498. RUTICILLA HODGSONII, Moore. Sikkim.

570. IANTHIA SUPERCILIARIS, (Hodgs.)

The female appears rather smaller than the dimensions given by Dr. Jerdon. I find in one from Darjiling, wing 3·05, tail 2·5, tarsus, 1·17, bill from forehead 0·45 inch. The distinctions between this form and *Ianthia rufilata* scarcely appear to warrant generic separation.

507. LARVIVORA SUPERCILIARIS, (Jerdon).

The chin in the male is white, with a black streak on each side, thigh coverts mixed with grey. Wing 2·82, tail 1·75, tarsus 1, bill from forehead 0·45, from gape 0·63 inch.

Placing this species beside a series of flycatchers, including *Cyornis Jerdoni*, *C. magnirostris*, *Siphia superciliaris* and *Nitidula Hodgsoni*, it is curious to remark the extraordinary similarity in the colouring and its distribution, whilst, except the bill, there is really very little structural difference between these various birds. The tarsi vary in length certainly, but all have rather long than short tarsi.

477. MYIOMELA LEUCURA, Hodgs.

I shot a male of this species at Darjiling; it was running along a road in the evening at dusk. Mr. Mandelli has sent a female. The white on the tail, judging from these specimens, occurs on all the feathers except the central and outer pairs, and it increases inwardly, not outwardly, as stated by Jerdon.

594. BUDYTES CITREOLUS, (Pall).

A Sikkim specimen has the wing $3\frac{1}{2}$ in., and is consequently the larger race, if there be two, or *B. citreolus*, Pall., *verus*.

766. ALAUDA ARVENSIS.

Amongst the specimens procured by me at Darjiling is a skin of a lark, which, to the best of my recollection, was purchased with some other skins of birds, evidently shot in the neighbourhood, from a shikari. It only differs from English specimens of the skylark by its greyer tint on the back and hind neck. Wing 4·2, tail 2·55, bill 0·45, tarsus 0·98, hind toe and claw 1·08, claw alone 0·65 inch.

The occurrence of *A. arvensis* so far to the eastward strongly confirms Mr. Blyth's view of the identity of *A. triborhyncha*, Hodgs. (*Ibis*, 1867, p. 47) with it.

560a. *PHYLLOSCOPUS PALLIDIPES*, sp. nov. Pl. vii.

P. supra umbrino-olivaceus, uropygio magis rufescenti; loris et lineâ postoculari umbrinis, superciliis albis, postice elongatis; remigibus umbrinis, extus rufescente olivaceo marginatis, rectricibus mediis cum dorso fere concoloribus, cæteris umbrinis, olivacco-marginatis; gastro sericeo-albo, pectoris lateribus olivaceis, axillâ albâ; rostro supra fusco, infra pallido; pedibus albescentibus. Long. alæ 2·05, caudæ 1·7, tarsi 0·76, rostri a fronte 0·4, a rictu 0·55 unc.

Brownish olivaceous above, supercilium white, extending far back, a dark line from the lores through the eye to the upper part of the ear coverts, the lower portion of which are light brown, central rectrices very little darker than the back, outer rectrices and wing feathers earthy brown, margined with olive which is rufescent on the edges of the quills. There is also a rufescent tinge on the rump. Lower parts silky white, sides of the breast dusky olivaceous, and the middle of the breast not quite so fine a white as the throat and abdomen, but this may be an individual peculiarity. Lower wing coverts, axillaries, and forepart of wing white. Bill dark above, pale below; feet very light coloured. The fifth quill is the longest, it exceeds the first by 0·87 in., the second by 0·4, the third by 0·15.

This form of which a single example in beautiful order has been sent by Mr. Mandelli appears to me quite new. It is near *P. neglectus*, Hume, *Ibis*, 1870, p. 143, but differs in its olivaceous tint above, smaller size and in the very pale coloured tarsi and feet. It is also quite distinct from *P. tristis*, Bl., *P. fuscatus*, Bl., *P. lugubris*, Bl., and from the various species described from China by Mr. Swinhoe, *P. tcnellipes*, Swinh., alone resembling it in its pale feet, but differing in colour.

REGULOIDES SP. ?

A single specimen from Mr. Mandelli's collection closely resembles *R. proregulus*, Pall. (*R. chloronotus*, Hodgs.) in appearance and size, and has a similar minute bill though a little broader and more *Abornis*-like, but the head is dusky grey, almost black, with a white central line and white supercilia, a distinct dusky line from the lores through the eyes; cheeks, throat and breast greyish white, lower breast and abdomen pale yellow, the two outer tail feathers on each side have the whole inner web white, and the third has nearly the whole, a very narrow border inside the web near the tip being brown, but the tip of the inner web itself white, not dark as in *R.*

erochroa. The wings and central rectrices are earthy brown with green outer margins, margin of wing yellow, inner wing coverts and inner margins of quills white, a little pale yellow on the axillaries, back olive, rump yellowish white. Bill dark throughout, without the pale base beneath of *R. proregulus*. Wing 1·82, tail 1·2, tarsus 0·7, bill from forehead 0·3, do. from gape 0·38 inch.

This appears to me to be an undescribed species. It is possible that it may be *Abrornis maculipennis*, Blyth, but in that case the measurement of the wing, Ibis 1867, p. 27, given as 2·75 in. must be a misprint for 1·75. This is possible, for the length of the tarsus is misprinted evidently. The bill in the specimen before me is somewhat between that of *Reguloides* and *Abrornis*, but the plumage is that of the former genus.

REGULOIDES SP. ?

This is again a single specimen, and may possibly be a variety of the last. It differs in being larger, but having a still shorter bill, and in the tips of the larger wing coverts being golden yellow, almost orange. There is a yellow tip in the outer web of the last few secondary (tertiary) quills which are in bad condition in the specimen last described, thus adding to the similarity to *Abrornis maculipennis*. The legs appear to differ in colour from those in the specimen last described. Wing 2, tail 1·35, tarsus 0·7, bill from forehead 0·27, from gape 0·35 inch.

570. CULICIPETA CANTATOR, (Tieckell).

Mr. Blyth calls this an *Abrornis* (Cat. Birds As. Soe. Mus. p. 183, and Ibis, 1867, p. 26). Two specimens which I can only refer to this bird are amongst Mr. Mandelli's despatch. The bill appears to me intermediate in form between *Abrornis* and *Culicipeta*, whilst the plumage is that of the latter genus, or rather of *Reguloides*. In fact but for the bill, the skins might be considered small specimens of *R. trochiloides*.

As there is no specimen of *C. cantator* in the Indian Museum, it is just possible I may be in error in the present identification. The birds do not agree very closely with Jerdon's description. The following are their characters.

Head greenish dusky above with an irregular whitish central streak, supercilia pale yellow, sides of head mixed dull green and whitish. Back dull green, a little lighter on the rump. Wings and tail brown, edged with green externally, the three outer rectrices on each side having the inner web margined and tipped with white, most broadly on the outer feathers. Tips of wing coverts pale yellow, forming two bars; edge of wing and axillaries pure yellow; under parts greenish or yellowish white. Bill dusky above, pale below; feet rather dark.

	Wing	Tail	Tarsus	Bill from forehead	Bill from gape.
(1)	2.28	1.73	0.73	0.38	0.55 inch.
(2)	2.1	1.6	0.7	0.38	0.54 „

574. *ABROBNIS SUPERCILLARIS*, Tickell.

J. A. S. B., 1859 p. 414,—*A. flaviventris*, Jerdon, Birds of India, vol. ii, p. 203.

As pointed out by Mr. Blyth, Ibis, 1867, p. 26, Darjiling specimens appear to agree with those from Tenasserim.

577. *A. ALBOGULARIS*, Hodgs.

Top of head rufous olive, with a black band on each side above the rusty supercilia, wings yellowish white within.

579. *TICKELLIA HODGSONI*, (Moore).

Mr. Mandelli has obtained three specimens of this rare bird, two of which appear to have no yellow in the middle of the rump, only the sides being of that colour. The fifth and sixth quills in both specimens slightly exceed the fourth in length.

	Wing	Tail	Tarsus	Bill from forehead	Bill from gape.
1	1.95	1.7	0.72	0.4	0.58 inch.
2	1.82	1.61	0.8	0.35	0.53 „
3	1.93	1.75	0.8	0.34	0.5 „

519a. *DUMETICOLA BRUNNEPECTUS*, Blyth, Ibis, 1867, p. 20.

The following is the description of a specimen sent by Mr. Mandelli.

Upper parts uniform olive brown, quills and outer rectrices brown with margins of the same colour as the back; lores whitish, chin, throat and middle of belly dirty white, sides of neck and breast the same colour as the back, middle of the breast pale brown, thigh coverts, vent and under tail coverts olive brown, the last named with white tips of no great breadth, about 0.1 in.; bill black, feet brown. Wing 2.3 in., tail 2, the central feathers exceeding the outer by 0.3, tarsus 0.82, bill from forehead 0.38, from gape 0.55. The fifth quill is the longest, the fourth very little shorter, third less by 0.1, second by 0.37 and first by 1 inch.

522. *TRIBURA LUTEOVENTRIS*, Hodgs.

I refer to this species a specimen sent by Mr. Mandelli, but which has not a trace of yellow on the lower parts.* The only example of Hodgson's species in the Indian Museum is in very bad order, and the colours have

* In Hodgson's original description P. Z. S. 1845, p. 30, the bird is said to be above olive brown with a luteous lustre, below lutescent laterally, and albescent centrally, a pale line over the eye. This agrees much better with the specimen before me than does Jerdon's account in the 'Birds of India.'

faded so much that it is difficult to form an idea of what they originally were. I append a description of Mr. Mandelli's bird.

Above uniform rufescent brown with an olivaceous tinge, wings and tail rather darker brown, the former with the margins of the feathers rather more rufous, sides of head and indistinct supercilia paler. Beneath, the chin and throat are dirty white, the remainder of the lower parts a similar colour to the back but paler, albescent towards the vent. Wing 2·1, tail 2·4, much graduated, the outer feathers 1·2 shorter, tarsus 0·73, bill from forehead 0·39, from gape 0·62 inch.

The figure of *Calamodyta affinis* in Gray's Genera of Birds, Pl. xlix, stated by Mr. Blyth, Ibis, 1867, p. 19, to represent this species, is altogether paler and more rufous than the specimen sent to me. It might have been taken from a faded specimen, but I cannot help thinking it possible that two forms are confounded under this species. Can one of them be *Horornis fortipes*?

535. *PRINIA STEWARTI*, Blyth.

A specimen sent by Mr. Mandelli is probably from Parniya or Tirkút. It is certainly smaller than specimens of *P. socialis* which I possess from the neighbourhood of Yelaur (Ellore), and the grey of the back is darker and purer, but the bill, though rather shorter, appears decidedly broader at the base. Wing 1·82, tail 2·1, tarsus 0·85, bill from forehead 0·42, from gape 0·55 inch.

537. *P. CINEREO-CAPILLA*, Hodgs.

Head, nape and hind neck, lores and upper ear-coverts rather earthy brown, remainder of upper parts very rufous brown, ochraceous on the rump, most rufous on the wings and tail; quills hair brown, margined with rufous; tail feathers more rufous, with pale tips, and a distinct dark spot just before it. Supercilium and lower parts white, with a faint creamy tinge, sides of breast olivaceous, flanks rufous, thigh coverts ferruginous; wing 1·75, tail 1·78, tarsus, 0·8, bill from forehead 0·4, from gape 0·55 inch.

This differs a little from Jerdon's description; his length of the bill $\frac{5}{8}$ in. must be a misprint for $\frac{3}{8}$. From *P. gracilis* the much more rufous lower back, wing and tail, and the darker head, serve easily to distinguish the present species, but the under parts with the exception of the thigh coverts are not more rufous. The bill appears to be a little stouter.

391. *STACHYRIS NIGRICEPS*, Hodgs.

A specimen wants the white supercilium and has the fore-neck bright rufous, much more rufous than the abdomen. Wing 2·2, tail 1·85, tarsus 0·85, bill 0·65 inch.

399a. *PELLORNEUM MANDELLII*, sp. nov. Pl. VII.

P. peraffine *P. ruficeps*, Swains., sed *staturâ minori, collo postico et laterali maculis fuscis magnis signato, maculis pectoralibus majoribus et*

saturationibus. Long. *alæ* 2·65, *caudæ* 2·5, *tarsi* 0·95, *rostri a fronte* 0·6, *alæ a rictu* 0·75 *unc.*

Crown of head and nape ferruginous, lores, over and under the eye, pale pinkish isabelline, most of the feathers of the forehead, lores and supercilia with slight dusky tips, ear coverts pale rufous brown, also with dark tips, back of the neck isabelline, or pale brown, each feather with a large dusky spot, frequently confined to one web, mantle and tail brownish olive, all the rectrices except the centre ones with narrow pale tips, quills hair brown margined with brownish olive externally, internally, like the lining of the wing, pale brown. Chin and upper throat pure white, remainder of lower parts isabelline, breast and sides of neck with large elongate dusky spots, flanks also spotted, but the spots are paler, abdomen unspotted. Bill dusky above, pale below, legs very pale coloured.

This species differs from *P. ruficeps*, Swains., and *P. Tickelli*, Blyth, (J. A. S. B., 1859, Vol. xxviii, p. 414; = *P. subochraceum*, Swinhoe, A. and M. N. H., April, 1871, p. 257), by having the neck spotted all round and by the spots in front being much deeper and darker. In size it resembles *P. Tickelli*, being smaller than *P. ruficeps*. It may perhaps be the new species from the Khasi hills mentioned by Dr. Jerdon in *Birds of India*, II, p. 28. A single specimen has been sent to me for identification by Mr. Mandelli, after whom I have named it.

620. MINLA CINEREA, (Blyth).

The type of this species is a very dull coloured grey specimen. I am almost inclined to doubt, if the much more brightly coloured birds described by Jerdon, and of which a specimen is sent by Mr. Mandelli, are really identical, but a series is necessary for deciding this. In the bird sent to me the wing measures 2·1, tail 1·5, tarsus 0·82 inch.; the dimensions are rather less than those of the type specimen, so that, if the differences are sexual, the female would appear to be the larger bird.

625. IXULUS STRIATUS, Blyth.

Neither Mr. Blyth in his original description of the Tenasserim specimen, nor Dr. Jerdon in the characters taken doubtless from his Darjiling or Khasi birds, mentions one of the most characteristic peculiarities of this form,—its ferruginous brown ear coverts and supercilia. In the type from Tenasserim, which is in the Indian Museum, I can detect these, although they are paler (perhaps from fading) than in a fresh specimen obtained by Mr. Mandelli, which otherwise agrees perfectly with Dr. Jerdon's description. Wing 2·35, tail 2·1, tarsus 0·6, bill from forehead 0·35 inch.

630. *HERPORNIS XANTHOLEUCA*, Hodgs.

Of two specimens sent, one has a decidedly rufescent tinge on the back. The colour is dull yellowish green above, under wing coverts and inner margins of both remiges and rectrices bright yellow. The coronal feathers have not black shafts and the margin of the wing is yellow, these being distinctions from the new Hainan and Formosan species, *H. tyrannulus*, recently described by Mr. Swinhoe (*Ibis*, 1870, p. 347, pl. x), besides the duller colour of the plumage.

632. *SYLVIPARUS MODESTUS*, Burton. Single specimen.647. *MACHLOLOPHUS XANTHOGENYS*, (Vigors).

A specimen was obtained in Eastern Nipal. Its representative form, *M. spilonotus*, occurs around Darjiling.

694. *PLOCEUS BAYA*, Blyth. *J. A. S. B.*, xii, p. 945.

P. megarhynchus, Hume, *Ibis*, 1869, p. 356, and 1871, p. 36.

Mr. Hume has pointed out that there are two species of *Ploceus* in India of the form originally confounded under *P. philippinus*, L. To one of these, which is larger than the other, and distinguished by a larger bill, he has given the name of *P. megarhynchus*. I find, however, that the large billed form is that inhabiting the Himalayas, Eastern Bengal, Asám, Malacca and probably Barma, and that it was upon specimens of it that Mr. Blyth's *P. baya* was founded, as it is the species found at Calcutta, and all the examples in the Asiatic Society's collection appear to belong to it.

There is of course a possibility that I may be mistaken in this, and that Mr. Hume's *P. megarhynchus* may be, in the breeding plumage, something well distinguished from *P. baya*, but I can detect no difference of the least importance in the description of the birds in non-breeding plumage. At the same time it is clear that there are two varieties of *P. baya*, but I am not quite sure that the difference is sufficiently constant to deserve specific distinction. I append measurements (in inches) of the two forms.

	wing	tail	tarsus	bill from front
<i>P. baya</i> , six specimens: four males, two females from Calcutta, Sikkim and Cachar.	2·85 to 3·05	1·87 to 2·15	0·82 to 0·9	0·69 to 0·77
<i>P. baya</i> , small var., three specimens: one male and two females from Singh-búm and Chanda.	2·6 to 2·75	1·7 to 1·8	0·79 to 0·9	0·65 to 0·69

I can detect no constant difference between males and females. Bonaparte's remark in the *Conspect. Gen. Av.* p. 442 *fœmina minor*, must have

been due to his having seen females, or males, in non-breeding plumage of the smaller form.

The smaller form is of course the *P. baya* of Jerdon's Birds of India.

723. *EUSPIZA RUTILA*, (Pall.)

Fauna Japonica, Aves, p. 95, pl. lvi, B.

This is an addition to the Indian fauna. The specimen sent by Mr. Mandelli agrees perfectly with Mr. Blyth's description of that shot by myself near Bassein in Pegu, (J. A. S. B., 1863, p. 77), and with the description and figure in the Fauna Japonica. I add characters taken from the Sikkim specimen which is doubtless a male.

Head and neck, upper breast, back, wing coverts, and broad edges to the last secondary quills (tertiaries of some authors) uniform reddish ferruginous, with slight hoary edges to some of the feathers (doubtless disappearing in spring), especially on the chin, lores, and round the eyes; wing and tail brown, the quills narrowly edged with yellowish white, second, third and fourth quills emarginate on the outer webs, margin of wing yellow, inner wing coverts and inner margins of quills white, lower parts from breast yellow, not very bright, flanks olive.

Wing 3 in., tail 2·4, tarsus 0·77, bill from forehead 0·43.

I learn from Mr. Mandelli that this bird was shot in British Sikkim on the great Rangit river in March, and that he has a second specimen from Dalingkót in Bútán, shot in April.

745a. *PROPASSER SATURATUS*, sp. nov. Pl. viii.

♀ *P. thura*, Blyth, Muscum Asiat. Soc., nec Bonaparte, vide Ibis, 1865, p. 44 et 1867, p. 44.

♂ juv. ? *P. thura*, ♀, (nec ♂) Moore P. Z. S. 1855, p. 216, Pl. cxiv.

P. mas fronte, superciliis latis et genis pallide argentato-roseis, capite insuper nuchá et lateribus colli cum regione auriculari saturate coccineis, vertice nigro striatulo; dorso brunneo, plumarum marginibus pallidis, coccineo lavatis, uropygio vix latiori; remigibus cum tectricibus alarum rectricibusque umbrinis, rubro-marginatis, tectricibus et 3 ultimis pennis ad extremitates externas roseis, flexurá alæ tectricibusque subalaribus partim roseo-marginatis; mento griseoente, gula late coccineá, nitore argenteo splendente, pectore saturatori, plumis pallide marginatis, abdomine pallide roseo, uná cum pectore subobsolete fusco striatulo, subcaudalibus brunneis, roseo-marginatis, tibiis et hypocondriis rufo-brunneis. Long. alæ 3·22, caudæ 2·6, tarsi 0·95, rostri a fronte 0·49, a rectu 0·52, l. tota circa 6 unc. angl.

Femina umbrina, capitis et dorsi plumis pallide marginatis, superciliis latis isabellinis; alis caudaque umbrinis, pennis extus pallide marginatis,

maculis ad extremitates externas tectricum et 3 pennarum ultimarum albescentibus, uropygio ochraceo-tincto, gastro fulvo, fusco striato, abdomine pallidior et magis rufescente. Long aë 3.15, caudæ 2.5, tarsi 0.95, rostri a fronte 0.47, a rictu 0.5 unc.

Male with a general brownish tint above, richly glossed with crimson, lores, forehead, supercilia and cheeks pale silvery pink, the bases of the feathers brown, head above dark crimson with blackish centres to the feathers, ear coverts and sides of the neck duller crimson, the centres of the feathers broader and less distinct, back with broad dashes of dark earthy brown, the edges of the feathers pale with a gloss of deep rose colour, approaching crimson, rump and upper tail coverts nearly the same colour as the back, the dark centres of the feathers being less marked, and the paler margins with their crimson gloss broader. Wing and tail feathers earthy brown with red brown exterior margins, and pale rosy spots on the tips of the outer webs of the wing coverts and of the last three quills. Chin greyish, throat full rose colour, darker than the cheeks, with a silvery gloss. The breast is deeper and darker red, the feathers having pale rosy edges and narrow dark central stripes, abdomen pink, also with narrow streaks; under tail coverts brown, edged with pink; thighs and flanks brown, slightly tinged here and there with pink. Bill dusky, legs brown.

The female is earthy brown, the feathers of the upper parts with pale margins, and the wing coverts and last three quills (tertiaries) with albescent tips to the outer webs, supercilia isabelline, rump with an ochraceous tinge. Under parts fulvous, all the feathers with dark centres, broader on the breast, narrower on the abdomen, which has a rufescent tinge.

Another bird, apparently a young male is much more ochraceous than the female in colouring, especially on the under parts, sides of neck and head; the margins of the quills and tail feathers are olivaceous.*

This beautiful rose finch is evidently the species of which a female exists in the Asiatic Society's Museum, labelled *P. thura* by Mr. Blyth, and to which that gentleman refers in the "Ibis" in the two instances cited above. It is altogether of a richer and darker colour than any of the other Himalayan species with which I am acquainted, viz., *P. rhodopeplus*, *thura*, *rhodochlamys* and *rhodochrous*, and easily distinguished from all at once by the absence of the rosy rump. *P. pulcherrimus* is said to be near *rhodochrous*, which differs perhaps more from the present species than any of the others, it too

* Another pair of this bird since received from Mr. Mandelli confirms the above description, except that the throat of the male is the same colour as the cheeks, instead of being rather deeper red; they measure (in inches)—

	wing	tail	tarsus	bill from forehead.
Male,.....	3.15	2.5	0.92	0.48
Female,	3.05	2.45	0.95	0.49

has a crimson rump. On the whole the present form approaches *rhodopeplus* more than any of the other species, but besides the differences already noted the forehead in *rhodopeplus* is not brighter in colour than the crown of the head.

The bird figured as the female of *P. thura* by Mr. Moore in the Proceedings of the Zool. Soc. of London for 1855, Aves, Pl. exiv, does not belong to that species. It may perhaps be the young male of this bird but its general coloration appears too rufous. The colour differs greatly from that of the female of *P. saturatus*.

At this time it is surprising to find that so beautiful a bird as this has hitherto been overlooked in the Sikkim Himalayas. Mr. Mandelli informs me that the specimens were shot on Tonglú, about 10,000 feet high near Darjiling.

Amongst other interesting birds sent by Mr. Mandelli are *Xiphoramphus superciliaris*, *Suya criniger*, *Nicornis flavolivacea*, *Pteruthius erythrop-terus*, *Accentor strophiatus*, *Emberiza pusilla* and *Chrysomitris spinoides*.